

(INVITATION FOR EXPRESSION OF INTEREST)

NTPC Limited

(A Government of India Enterprises)



Invites

Expression of Interest (EOI)

From

Any Indian or Indian Subsidiary/Affiliates of Global Company

For

**On-Site supply of Bulk Hydrogen Gas between 15-30
bar pressure for short term R&D Demonstration of H2
Co-firing in NTPC Gas Turbines**

(Ref: NTPC/NETRA/EOI/10-2021)

Expression of Interest from Indian or Indian Subsidiary/Affiliates of Global Company for 'On-Site supply of Hydrogen gas at 15-30 bar pressure for short term R&D Demonstration of H₂ co-firing in NTPC Gas Turbines'

Section-I: EOI Information

1.0 ABOUT NTPC

NTPC is India's largest energy conglomerate with +66 GW power generating capacity, with roots planted way back in 1975 to accelerate power development in India. Since then, it has established itself as the dominant power major with a presence in the entire value chain of the power generation business. From fossil fuels, it has forayed into generating electricity via hydro, nuclear and renewable energy sources. This foray will play a major role in lowering its carbon footprint by reducing greenhouse gas emissions.

2.0 ABOUT NETRA

NETRA is the R&D wing of NTPC. Through its innovative solutions, NETRA contributes to position NTPC at the front of learning curve and sustain its eminence in the Indian Power Sector. NETRA endeavors to become a key player and driver for R&D in the domain of energy, nurturing NTPC goals. For now, besides providing state of art scientific services to Indian power plants, NETRA is focused towards development and demonstration of technologies in the domain of carbon capture and its utilization, green hydrogen, green synthetic fuel and chemicals, water, ash etc.

3.0 PURPOSE OF THE EOI

a. Background

NTPC intends to demonstrate hydrogen co-firing in existing gas turbine for power generation. Using hydrogen gas as a fuel in gas-turbine plays an important role in decarbonization of the energy sector. NTPC is aggressively pushing for greening its portfolio and firing hydrogen in gas-turbine project is another step towards achieving the low carbon footprint. NTPC has a number of fleets of Gas turbine based Combined Cycle Power Plants where Natural Gas/RNLG/Naptha is being fired for power generation. If Hydrogen is co-fired with Natural gas/RNLG, the CO₂ emission from the gas turbine can be reduced.

b. Purpose of the EOI

The EOI is published to assess the amount of Hydrogen that can be made available "On-site" at the requisite quantity and quality as per "Scope of Work" given elsewhere in the document.

- i. Short term supply
- ii. Approximate cost of supply

After identifying the Indian/ Indian subsidiary of Global Company/ Consortium/ Affiliates/ Representatives (hereinafter called APPLICANT), contractual and

commercial proposals for “On-Site supply of hydrogen gas at 15-30 bar pressure for short term R&D Demonstration of H2 co-firing in NTPC Gas Turbines” in some selected gas Turbine shall be initiated separately.

c. Hydrogen Requirement for short term Supply

S.No.	Description	Requirement
1.	Average hourly flow (Nm ³ /h)	~1500
2.	Total requirement (Nm ³ /h)	1,68,000 (8 hr. operation for 14 days)
3.	Delivery pressure (bar)	15-30
4.	Purity (%)	99.99
5	Cost of Supply	Landed cost at each location

d. Scope of the work involved for short-term supply

- a. Delivery of hydrogen at the doorstep at the designated location/s.
- b. 1-day stay of Hydrogen Trailer/Tanker at Site
- c. Provision of hydrogen unloading hose/pipe/fittings for connection to the NTPC terminal point.
- d. Connection, gas charging to the terminal point of NTPC, and its supervision during the course of operation.
- e. Uninterrupted supply of hydrogen during the required period.
- f. Any statutory clearance for temporary storing of H2 Cascade at NTPC Site.
- g. At present no storage capacity is envisaged at the Site.
- h. Please consider a 25-30 m distance between the Hydrogen Trailer/Tanker halt point and “H2 Gas Receiving Station of the Gas Turbine”

e. Location of NTPC Gas Turbine Stations:

S.N.	Description	Location and Address
1.	NTPC Kawas	Village Mora, Hazira Road, Surat, Gujarat,394516
2.	NTPC Dadri	Vidyut Nagar, Gautam Buddha Nagar, UP, 201008
3.	NTPC Faridabad	Vill Muneri, PO Neemka,Dist Faridabad, 121101

4.0 EOI TIMELINES

Interested APPLICANT/s may download the documents of EOI free of cost from www.ntpctender.com & <https://eprocurementpc.nic.in>. Important dates for the EOI are following:

a.	Last date for queries/ seeking clarification	30.10.2021
b.	Last date for submission of EOI	20.11.2021
c.	Response Validity	12 months from Last Date of EOI Submission

5.0 VALIDITY OF THE RESPONSES

The Applicant shall submit the responses which shall remain valid up to twelve (12) months after the response Deadline (“Response Validity”). NTPC reserve the right

to reject any response, which does not meet the aforementioned validity requirement.

NTPC may solicit the Applicant's consent for an extension of the period of validity of the response. The request and the response in this regard shall be in writing. In the event any APPLICANT refuses to extend its response validity as requested by NTPC, NTPC shall terminate processing of such APPLICANT's responses. An APPLICANT accepting NTPC request for validity extension shall not be permitted to modify its response.

Expression of Interest from Indian or Indian Subsidiary/Affiliates of Global Company for 'On-Site supply of Hydrogen gas at 15-30 bar pressure for short term R&D Demonstration of H2 Co-firing in NTPC Gas Turbines'

Section-II: Instructions to the Applicants

1. GENERAL INSTRUCTIONS:

- a. Language of the responses to EOI or any query/ clarifications/ correspondences shall be in English only.
- b. For expression of interest, Application Form and Annexures given in Section-III shall be duly filled and sent to NTPC by the applicant in hard as well as soft copy.
- c. Applicant should go through Section-I and Section-II thoroughly before filling and submitting the application form and annexures in Section-III.
- d. Applicant shall mention the name and contact details of two persons, with complete address, phone number, and email id.
- e. NTPC Ltd. may, at its sole discretion, ask for additional information/ documents and/ or seek clarifications from the applicant (s) after the Deadline for submission of response, inter alia, for the purpose of removal of inconsistencies or infirmities in their responses.

2. CORRIGENDUM:

At any time before the last date of submission of EOIs, NTPC may, for any reason, whether at its own initiative or in response to a clarification requested by an applicant, modify the EOI document. The amendment will be posted on the website and will be binding on the applicant (s) and the applicant will give due consideration to the same, while they submit their EOIs, and would invariably enclose documents/ information, as required, on account of the amendment, as a part of the EOI. NTPC may, at its discretion, extend the deadline for the submission of EOIs.

3. CONTENT OF EOI:

The application of EOI consists of the following in Section-III:

- Covering Letter in Annexure 1
- Information to be filled in Annexure 2

4. SUBMISSION OF EOI:

For consideration of EOI, applicants are required to e-mail softcopy of EOI, completed in all respect, through e-mail as well as send the hard copy of the

same, which can be submitted either in person or by registered/ speed post till last date of submission of EOI to the following address:

a. Soft Copy: (i) To: sujaykarmakar@ntpc.co.in, (ii) CC: headnetra@ntpc.co.in

b. Hard Copy:

Ref EOI No.: NTPC/NETRA/EOI/10-2021 Dated: 19.10.2021

Submitted to:

Sh. Sujay Karmakar
NETRA, NTPC LTD
E-3, ECOTECH-II, UDYOG VIHAR, GREATER NOIDA-201306
DISTT. GAUTAM BUDH NAGAR, UP (INDIA), Phone: 0120-2356581

All the pages of the response should be duly stamped and signed by the authorized signatory in whose favour the Power of Attorney is issued.

NTPC reserves the right to reject or accept any or all applications, cancel/withdraw the EOI process without assigning any reason whatsoever and in such case, the APPLICANT shall not have any claim arising out of such action. NTPC bears no responsibility or liability of any kind in reference to the EOI.

5. OPENING OF RESPONSES TO THE EOI:

The responses to the EOI shall be opened as per the time schedule 1500 Hrs at date as mentioned in Section-I and will be communicated to the applicant (s) via e-mail.

In the event of any of the above dates falling on a day that is not a working day or which is a public holiday, the responses shall be opened on the next working day at the same venue and time.

6. RESPONSIVENESS CHECK OF EOI:

Responses shall be deemed non-responsive for the following reasons:

- a. Responses that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney, applicable undertakings, provided in more details at annexure in Section-III;
- b. Responses not signed by authorized signatory and/or stamped in the manner indicated in this EOI;
- c. Material inconsistencies in the information/ documents submitted by the Applicant
- d. An Applicant submitting more than one response to this EOI either itself or through an affiliate or subsidiary company;
- e. Response validity being less than that required as per Clause 5 of section-I of this EOI;

- f. Response being conditional in nature;
- g. Response not received by the response Deadline;
- h. Response having Conflict of Interest;
- i. Applicant delaying in the submission of additional information or clarifications sought by NTPC, as applicable;

All responses that shall meet the responsive check requirements set out above in this section of the EOI document shall be considered as responsive. In case of non-submission of relevant details as above, the responses may be considered as “Non-responsive”, at the sole discretion of NTPC and will not be considered further.

7. COSTS AND EXPENSES TOWARDS RESPONSE TO EOI:

The Applicants shall be responsible for all the costs associated with the preparation of the response and participation in discussions and finalization & execution of the documents related with this EOI, NTPC shall not be responsible in any way for such costs, regardless of the conduct or outcome of this short-listing/ selection process.

8. CONFIDENTIALITY:

The Applicants undertake to hold in confidence this EOI and any document related or pursuant to this EOI and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

- a. To their professional advisors;
- b. To their officers, contractors, employees, agents or representatives, financiers, who need to have access to such information for the proper performance of their activities;
- c. Disclosures required under applicable law, without the prior written consent of the other parties of the concerned agreements.

Provided that the Applicant(s) agrees and acknowledges that NTPC may at any time, disclose the terms and conditions of this EOI and any document related or pursuant to this EOI to any person, to the extent stipulated under the applicable Law.

Expression of Interest from Indian or Global Company for ‘On-Site supply of Hydrogen gas at 15-30 bar pressure for short term R&D Demonstration of H2 co-firing in NTPC Gas Turbines’

Section-III: Application Form & Annexures

ANNEXURE-1

FORMAT FOR COVERING LETTER CUM UNDERTAKING

(The covering letter should be on the Letter Head of the Applicant)

Date : _____

Place : _____

To,

Sub.: (INVITATION FOR EXPRESSION OF INTEREST)

Ref.: EOI No. _____, dated _____ (the “EOI”)

Dear Sir,

We, the undersigned [Insert the name of the “Applicant”] having read, examined, and understood in detail the (INVITATION FOR EXPRESSION OF INTEREST).

We confirm that neither we nor any of our Parent Company/ Affiliate/ Ultimate Parent Company has submitted response other than this response directly or indirectly in response to the aforesaid EOI.

1. We give our unconditional acceptance to the EOI, issued by NTPC, as amended. In token of our acceptance to the EOI, the same has been signed & stamped by us and enclosed to the response. We hereby confirm that the provisions of the EOI shall be binding on us.
2. We have submitted our response strictly as per provisions and formats of the EOI, without any deviations, conditions, and without mentioning any assumptions or notes.
3. We hereby unconditionally and irrevocably agree and accept that the decision made by NTPC in respect of any matter regarding or arising out of the EOI shall be binding on us. We hereby expressly waive any and all claims in respect of EOI process. We confirm that there are no litigations or disputes against us, which materially affect our ability to participate or function under the obligations with regard to EOI.

4. Details of the contact person are furnished as below:

Name :

Designation:

Address:

Contact numbers:

Email id:

5. We are enclosing herewith the entire response containing duly signed formats in electronic format sent via email to NTPC as per the EOI for consideration.
6. It is confirmed that our response is consistent with all the requirements of submission as stated in the EOI and subsequent communications from NTPC if any.
7. The information submitted in our response is complete, strictly as per the requirements stipulated in the EOI, and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our response.
8. We confirm that all the terms and conditions of our response are valid for acceptance for a period of twelve (12) months from the response Deadline.
9. We confirm that we have not taken any deviation so as to be deemed "Non-Responsive" as stipulated in Section-II of this EOI.
10. We understand that you are not bound to accept any response you receive.

We remain,

Yours sincerely

(Name, Designation, and Signature of Authorized Person in whose name Power of Attorney is issued)

ANNEXURE-2
INFORMATION TO BE SUBMITTED BY APPLICANT

(Note: Documents in support of meeting the respective requirement shall be submitted by the Applicant.)

S.No	DETAILS	REMARKS (Kindly enclose separate papers wherever required with cross ref)
A	GENERAL DETAILS	
A.1	Name of Organization	
A.2	Address of Organization	
A.3	Contact Details (Email, Phone, Fax, Mobile)	
A.4	Contact Details of Indian representative (Email, Phone, Fax, Mobile)	
A.5	Hydrogen Supply Capabilities	
A.6	Present Quantity of H2 gas handled	
B	Hydrogen Supply Assessment	
B.1	Hydrogen Available for supply: Provide (x) and (y)	(x) Nm ³ /hr*8 hrs* (y) days
B.2	H2 purity (% volume H2)	
B.3	Composition of gas (impurities in vol %)	
B.4	How supplied H2 is produced	
B.5	How H2 is stored during supply	
B.6	How H2 is transported for supply	
B.7	Supply state of Hydrogen (Pressured/Liquefied)	State/Pressure/Temperature
B.8	Dispensing method	
B.9	Dispensing pressure	
B.10	If Liquefied, measures to prevent liquid carryover during dispensing	
B.11	Proposed logistics for reaching site	
B.12	Proposed logistics for unloading	
C	HYDROGEN SAFETY AND QUALITYDETAILS	
C.1	Legal and statutory norms followed for hydrogen storage, transportation, and supply	
C.2	Requirement from NTPC for safe unloading and forwarding to Gas Turbine	
C.3	How the quality and quantity of the supplied H2 be ascertained at the Supply/receiving point at NTPC	

D	BUSINESS INFORMATION	
D.1	Technical Capability of participant/Associates	
D.2	Whether the applicant has Supply capability (Yes/No)	
D.3	Whether the applicant has executed work against SI. no D.1 & D.2 above. If yes, then provide details (PO, completion certificate, Performance certificate, number of years in operation).	
D.4	Whether the applicant is ready to provide On-Site Hydrogen as per the Scope of Work.	
D.5	In addition to the above applicant can suggest any other delivery model based on their experience.	
E	FINANCIAL DETAILS	
E.1	Copy of audited annual report for the last three years	
E.2	Budgetary Quote as per the Scope of Work	For each location

I/We declare that the information stated herein above is accurate.

Signature (with designation & seal):

Printed Name:

Company Address:

Tel:

Fax:

Email:

Date: